

02-09-'04 15:20 FROM-Lerner & Greenberg

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T-174 P07/26 U-098

Appl. No. 10/035,873

Amendment Dated: February 9, 2004

Reply to Office action of October 9, 2003

In the Claims:

Claim 1 (Currently Amended). A filter configuration for a multi-pole plug-in connector to be mounted in a shell and having a plurality of signal pins to be connected, comprising:

a monolithic planar filter having a plurality of capacitors, each of said capacitors having:

a plurality of signal electrodes for connecting to the signal pins,

a one common shared ground electrode, and

a one common shared dielectric layer formed of a ceramic material disposed between said ground electrode and said plurality of signal electrodes, having two side surfaces and an edge, and being block shaped, perforated with pin lead-throughs for receiving the signal pins, and subsequently sintered,

a first of said side surfaces bearing said ground electrode, said side surface bearing said ground electrode being lapped to planarity to prevent overloads caused by spot-loads, and

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a second of said side surfaces bearing said signal electrodes to the signal pins; and

a supporting plate being sintered and formed as a printed-circuit-board dielectric plate with a dielectric constant lower than said dielectric layer and having supporting-plate pin lead-throughs corresponding to the pin lead-throughs;

said supporting-plate pin lead-throughs having a diameter sufficiently wider than the signal pins to draw solder via capillary action into said pin lead-throughs;

~~solder drawn into said pin lead-throughs and fixing said planar filter to the signal pins, fixing said supporting plate to the signal pins, fixing said planar filter to said supporting plate, and said signal pins to the assigned signal electrodes of said capacitors;~~

said planar filter and said supporting plate being separately finished.

Claim 2 (Original). The filter configuration according to claim 1, wherein said base is formed of titanate.

Claim 3 (Original). The filter configuration according to claim 1, wherein said base is formed of strontium titanate.

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Claim 4 (Original). The filter configuration according to claim 1 for the multi-pole plug-in connector having a multiplicity of the signal pins to be connected, wherein:

said dielectric layer has a multiplicity of said pin lead-throughs formed therein each corresponding to one of the multiplicity of the signal pins;

said support plate has a multiplicity of said pin lead-throughs formed therein, each of the pin lead throughs having a respective pin-lead through; and

a multiplicity of said signal electrodes, each of said signal electrodes having a respective pin-lead through.

Claim 5 (Original). The filter configuration according to claim 4, wherein the multiplicity of the signal pins are disposed in rows and columns.

Claim 6 (previously presented). A multi-pole angle-connecting device, comprising:

a plurality of signal pins having one end to be soldered to a soldering joint and another end having a connector;

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a monolithic planar filter having a plurality of capacitors,  
each of said capacitors having:

a plurality of signal electrodes, each connected to a  
respective one of said signal pin pins,

a one common shared ground electrode, and

a one common shared dielectric layer formed of a ceramic  
material disposed between said ground electrode and said  
plurality of signal electrodes, having two side surfaces  
and an edge, and being block shaped, perforated with pin  
lead-throughs for receiving said signal pins, and  
subsequently sintered,

a first of said side surfaces bearing said ground  
electrode, said side surface bearing said ground  
electrode being lapped to planarity to prevent overloads  
caused by spot-loads, and

a second of said side surfaces bearing said signal  
electrodes ~~to the signal pins~~; and

a supporting plate being sintered and formed as a printed-  
circuit-board dielectric plate with a dielectric constant

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lower than said dielectric layer and having a pin lead-throughs corresponding to the pin lead-throughs;

said supporting-plate pin lead throughs having a diameter sufficiently wider than the signal pins to draw solder via capillary action into said pin lead-throughs; and

solder in said pin lead-throughs fixing said planar filter to said signal pins, fixing said supporting plate to said signal pins, fixing said planar filter to said supporting plate, and connecting said insular regions of said signal electrodes to said signal pins;

~~said planar filter and said supporting plate being separately finished.~~

Claim 7 (Original). The multi-pole angle-connecting device according to claim 6, wherein said connector is a connector pin.

Claim 8 (Original). The multi-pole angle-connecting device according to claim 6, wherein said connector is a plug-in socket.

Claim 9 (Previously Presented). The filter configuration according to claim 1, wherein said support plate has two

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opposing sides, said sides being fine-ground and lapped to be flat and parallel to each other.

Claim 10 (Previously Presented). The multi-pole angle-connecting device according to claim 6, wherein said support plate has two opposing sides, said sides being fine-ground and lapped to be flat and parallel to each other.

Claim 11 (New). The filter configuration according to claim 1, wherein:

said supporting plate is to be connected to the signal pins by soldering the openings in said support plate to the signal pins;

said planar filter is to be connected to the signal pins by soldering the signal electrodes to the signal pins; and

said supporting plate and said planar filter abut and are not fixed directly to each other.

Claim 12 (New). The multi-pole angle-connecting device according to claim 6, wherein:

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said supporting plate is to be connected to the signal pins by soldering the openings in said support plate to the signal pins;

said planar filter is to be connected to the signal pins by soldering the signal electrodes to the signal pins; and

said supporting plate and said planar filter abut and are not fixed directly to each other.

Claim 13 (New). The filter configuration according to claim 1, wherein said ground electrode is applied to said dielectric layer subsequent sintering of said dielectric layer.

Claim 14 (New). The multi-pole angle-connecting device according to claim 6, wherein said ground electrode is applied to said dielectric layer subsequent sintering of said dielectric layer.

Claim 15 (New). The multi-pole angle-connecting device according to claim 6, wherein said planar filter and said supporting plate are separately finished.

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Amendments to the Drawings:

The attached sheet of drawing includes changes to Fig. 1-2.

This sheet, which includes Figs. 1-3, replaces the original sheet including Figs. 1-3. In Fig. 1, the reference number 1B has been added to identify the surface. In Fig. 2, the reference number 1A has been added to identify the surface.

Attachment: Replacement Sheet